

S/181/61/003/010/024/036
B125/B102

AUTHOR: Atanasov, A. A.

TITLE: Theory of slow-neutron scattering from a plane-parallel crystal plate

PERIODICAL: Fizika tverdogo tela, v. 3, no. 10, 1961, 3123-3132

TEXT: The author examines slow-neutron scattering by using a method for solving analogous problems for X-rays, which was suggested by Khr. Ya. Khristov (DAN SSSR, 81, 553, 1951; 81, 799, 1951) and applied by G. Desimirov (Izv. Bolgarskoy Akad. nauk, Otd. fiz.-mat. i tekhn. nauk, ser. fiz., 8, 233, 1960; 8, 249, 1960). Contrary to a previous work of the author (Dokl. Bolgarskoy Akad. nauk, 13, 527, 1960), crystal systems and angles of incidence are investigated with the use of the "optical wave" introduced by A. Herpin. The potential $V = 4\pi a\delta(\vec{r}) \lim_{\vec{r} \rightarrow 0} (\partial/\partial r)r$ is used to describe the interaction of slow neutrons with bound nuclei. The author confines himself to the case where the wavelength has the same order of magnitude as the lattice constant. The scattering is assumed to be

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elastic and spherically symmetric, and the thermal motion of atoms is neglected. The incident optical wave is assumed to be plane and monochromatic. In the case of random nuclear spins, the optical wave is given by

$$(\Delta + k_0^2) \varphi(r) = \sum_i \sum_j 4\pi a_i V''(r - r_{ij}) \varphi(r), \quad (6)$$

$$V''(r) = \delta(r) \lim_{r \rightarrow 0} \left(\frac{\partial}{\partial r} \right) r. \quad (7)$$

$$a_i = a_0 - i \left(S \frac{(S+1)}{4} \right) a_0^2 k_0. \quad (8)$$

where a_0 and a_0^2 are known constants, and S is the nuclear spin. $\vec{\mu} = (m, n)$ and $\vec{\tau}(\xi, \eta)$ are two-dimensional vectors. The equation $(\Delta + k_0^2) \varphi_1^* = 4\pi a_0 Z_1 \delta(s=1) \sum_{\vec{\mu}} e^{i(2\pi\vec{\mu} - \vec{\tau}) \vec{r}} F^*$ (12) is valid for the optical

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wave ψ_1^* at the plane $z = l$. It has the solution

$$\psi_1^* = \begin{cases} -\sum_{\mu} Z_i u_{\mu} s_{\mu(+)}^l e^{ik_{\mu}^{(+)} r}, & z > l, \\ -\sum_{\mu} Z_i u_{\mu} s_{\mu(-)}^l e^{ik_{\mu}^{(-)} r}, & z < l, \end{cases} \quad (14)$$

with

$$s_{\mu(\pm)} = e^{-i k_{\mu}^{(\pm)}}, \quad u_{\mu} = \frac{4\pi\sigma_{1f}}{H(\gamma_{\mu}^{(+)} - \gamma_{\mu}^{(-)})}, \quad k_{\mu}^{(\pm)} = (2\pi m - \xi, 2\pi n - \eta, \gamma_{\mu}^{(\pm)}). \quad (15)$$

$\gamma_{\mu}^{(+)}$ and $\gamma_{\mu}^{(-)}$ are the roots of

$$H\Gamma^3 + 2(2\pi\mu - \tau)G\Gamma^2 + (2\pi\mu - \tau)F(2\pi\mu - \tau) - k_0^3 = 0. \quad (16)$$

The optical wave produced by all the nuclei on the straight line $y = k'$, $z = l(k' \neq k)$ has the form

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$$\phi_{i_0}^* = CZ_i e^{-i(\xi h + \tau, k)}, \quad (17)$$

$$C = -\frac{2\pi a_1}{|e_1|} \sum_{k'=1}^{+\infty} \sum_{m=-\infty}^{+\infty} \cos\left(2\pi m \frac{e_1 e_2}{|e_1|^2} k'\right) H_0^{(1)}\left(\frac{k' |[e_1 e_2]|}{|e_1|}\right) \times \\ \times \sqrt{\left(\frac{2\pi m}{|e_1|} - \frac{\xi}{|e_1|}\right)^2 - k_0^2} - 2\pi a_1 \sum_{h=1}^{\infty} \frac{e^{ih|e_1|}}{h|e_1|}. \quad (18)$$

The expressions for the optical waves are then applied to 4 special cases. Cases 1 and 3 correspond to neutron diffraction behind the crystal (case of Laue), while cases 2 and 4 correspond to neutron diffraction in front of the crystal (case of Bragg). There are 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: M. J. Hay. AERE. Rep. 2982, Harwell, 1959.

ASSOCIATION: Tekhnologicheskiy institut pishchevoy promyshlennosti Plovdiv, Bulgaria (Technological Institute of the Food Industry, Plovdiv, Bulgaria)

SUBMITTED: May 29, 1961
Card 4/4

ATANASOV, A.I.; PISAREV, A.M.

The draw gear of a homogeneous train, and its stress at starting. Godishnik mash elekt 10 no.3:239-250 '61 (publ.'62).

COUNTRY	: BULGARIA	D
CATEGORY	: Cosmochemistry. Geochemistry. Hydrochemistry	
ABC. JOUR.	: RZKhim., No. 23 1959, No. 81784	
AUTHOR	: Atenasov, A. N.	
INST.	: Sofia University, Biological-Geological- [#]	
TITLE	: Exogenous Galenite from Radzharovo Deposit	
ORIG. PUB.	: Godishnik Sofiysk. un-t. Biol.-geol.-geoefr. fak., 1956-1957 (1958), 51, No 2, 141-150	
ABSTRACT	: The deposit is represented by a system of veins in vulcanogenic rocks. The veins are filled with quartz and barite with galenite, sphalerite, chalcopyrite and pyrites. The zone of oxidation and the zone of secondary sulfides are prominent. In the latter, coatings and overgrowths of galenite are noticed	

[#]Geographical Faculty

CARD: 1/2

D. C.

~~ATANASOV, Atanas N.~~

Structure of the Madzharovo lead-zinc deposit. Godishnik biol
52 no.2:313-348 '57/'58 [publ. '59].

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000102510007-5

ATANASOV, A. N.

Mineral and thermometric of the Muzhakov complex ore deposits.
Godishnik biol. 56 no. 2:261-274 [61-162] [publ. 1982].

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000102510007-5"

ATANASOV, A. N., PRESKOVSKA, V. V.

Primary ores containing anglesites in the Madzharovo deposit
(northeastern Rhodope Mountains, Bulgaria). Geol. rud. mestorozh.
no. 4:110-113 J1-Ag '60. (MIRA 13:8)

1. Narodnaya Respublika Bolgarii, Sofiyskiy gosudarstvennyy
universitet.
(Rhodope Mountains (Bulgaria)--Anglesite)

ATANASOV, A. N.

Mineral and thermometric investigations of the Madzharovo
complex-ore deposit. Godishnik bisl 56 261-274 '61/'62.

RADONOVA, T.G.; ATANASOV, At.

Wurtzite from the lead-zinc deposit Madzharov, Eastern Rhodope. Izv Geol inst BAN 10:49-56 '62.

ATANASOV, A.

Some peculiarities of the emulsion structures in the sphalerite
of the polymetallic deposits of Madzharovo, Eastern Rhodope Mountains.
Doklady BAN 15 no.1:73-76 '62;

1. Predstavleno chl.-korr. Iv. Kostovjm.

ATANASOV, At.

Partitioned liquid inclusions in natural quartz. Doklady BAN
16 no.5:533-536 '63.

1. Predstavleno chl-korr. I. Kostovym.

ATANASOV, A.N.

Structural control of lead-zinc mineralization in the Zgid ore field. Geol. rad. mestorozh. 6 no.2:102-108 Mr-Ap '64.
(MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet, kafedra poleznykh iskopayemykh, i Sofiyskiy gosudarstvennyy universitet, kafedra poleznykh iskopayemykh i geokhimii.

ATANASOV, At.; ASKEPASI, G.

Rare elements in the galenite of Madzharevo. Godishnik na: 189-196 '62-'63[;tbl. '64].

ATAMADOV, At.; R. LKOVSKA, V.

Sulfo-salts of the Orenburg ore region, and their mineral paragenesis.
Geofizika 1963 no.1:197-204 [162-163] [publ. '64]

ATANASOV, At. N.

Microscopic geologic thermometers. Prir i znanie 17 no 9;
10-13 N '64.

Bulgaria/Medicine - Reanimation

May 52

"Reanimation," Dr Atanas P. Atanasov, Assistant, Propedeutic Surgical Clinic, Sofia Med Acad "V. Chervenkov"

PA 240T17

"Khirurgiya" Vol 5, No 2, pp 94-104.

ATANASOV, ATANAS p
(3)

Describes the various methods of reanimation in cases of deep shock or collapse caused by surgery, trauma, asphyxiation, etc. The authors consider blood transfusion the most logical treatment of shock, and advocate following the methods used in the USSR, a country which they consider outstanding in achievements in this field. They enumerate various blood substitutes which have been imported and tried in Bulgaria. Dry plasma from the USA has been found satisfactory, though care has to be exercised to dissolve it properly. Heterogenous animal blood serum VNS (Soviet method) has also proved satisfactory, but the use of blood obtained from dead humans has not proved popular. The authors praise the new blood substitute "Supertozan" (Solution of polyvinylpyrrolidone) or Periston-Bayer, which is still in the exptl stage and has not been released for general use. The authors attribute major importance in the prevention of shock to the preoperative preparation of a patient. They recommend the use of Eucodal-Ephetomin or Morphine-Scopolamine. They discuss sleep therapy, which has not been adopted yet in Bulgarian hospitals. The entire article is based primarily on the experience and methods of USSR medicine as applied at the Bulgarian hospitals.

240T17

VODENICHAROV, H.I.; ATANASOV, A.D.

Working capacity in domiciliary conditions in schizophrenia. Suvrem.
med. Sofia 8 no.5:30-34 1957.

1. Iz Okruzhniiia psichonevrologichei dispanser--Stara Zagora.
(SCHIZOPHRENIA,

working capacity in domiciliary cond. (Bul))
(DISABILITY EVALUATION, in various diseases,
schizophrenia, in domiciliary cond. (Bul))

VODENICHAROV, Ye.I., ATANASOV, A.P., KUS'OVA, A.B., KALANAROV, V.I., GROZEV, N.D.

Working capacity of nonhospitalized patients [with summary in French]
Zhurn.nevr. i psich. 58 no.8:991-994 '58 (MIRA 11:9)

1. Okrzhnoy psikhoneurologicheskiy dispanser, Stara-Zagora,
Bulgariya.

(EPILEPSY, physiology,
working capacity (Rus))

(WORK,
capacity in epilepsy (Rus))

~~ATANASOV, Asen T.~~

BULGARIA/Human and Animal Physiology - Internal Secretion.

V-7

Abs Jour : Ref Zhur - Biol., No 2, 1958, 8898

Author : Asen T. Atanasov

Inst : The Medical Institute of the Bulgarian Academy of Sciences

Title : New Data on the Study of Diabetes and its Treatment.

Orig Pub : Izv. Med. in-ti. Bulg. AN, 1956, 13, 515-541

Abstract : No abstract.

Card 1/1

ATANASOV, B.

ATANASOV, B. Conchooidal construction of the swimming pool at the Physical Education Center in Sofia. p. 1.

Vol. 3, no. 12, 1956

STROITELSTVO

TECHNOLOGY

Bulgaria

So: East European Accession, Vol. 6, No. 5, May 1957

ATANASOV B.

New color reactions of the aromatic amines. M. N. Neundorf and E. Atanassov (Men. Inst. Sci., Bulgaria). Compt. rend. acad. bulg. sci. No. 3, 31-3 (1948) in French.—Mixture of amines, with the various solvents, and the soln. is acidified with various conc. and dil. strong acids. The color of the resulting soins are given qualitatively. Quant. data on the min. quantity discernible is given for the reactions of groups of isomers with specific acids. Qual. data is also given for reactions of mixtures of two amines.

Marian C. Neundorf

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ATANASOV, B.

ATANASOV, B. Planting in small sheaves. p. 193. Vol. 12, no. 5, May 1956
GORSKO STOPANSTVO. Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4 April 1957

ATANASOV, B.

"Orientative economic characteristics of some methods of soil cultivation
for afforestation."

GORSKO STOPANSTVO, Sofia, Bulgaria, Vol. 15, no. 4, Apr. 1959.

Monthly list of East Europe Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59
Scrib.
Uncclas

PASHOV, P., inzh.; STOIANOV, V., inzh.; ATANASOV, B., inzh.

Possibilities of increasing labor productivity through the mechanized transportation of ores in the layer and subdrift systems of mining. Min delo 17 no.9:13-17 S '62.

1. "Miproruda".

ATANASOV, B.

Strugling for the reduction of prime cost in the wool industry.
Leka promishl 2 no.9:5-11 '53.

PASHOV, P., inzh.; STOIANOV, Ves., inzh.; ATANASOV, B., inzh.; DANOV, Vl., inzh.; KHRISTOV, Khr., inzh.

Ways of improving the system of ore layer cavings by flexible flooring and metallic bracing. Min delo 18 no.7:15-20 J1 '63.

1. "Niproruda" (for Pashov, Stoianov, And Atanasov). 2. Minno-geologzhki institut (for Danov). 3. DMP "Gorubso" (for Khristov).

STOIANOV, Ves., inzh.; PASHOV, P., inzh; ATANASOV, B., inzh.; IANAKIEV,
G., kand. na tekhn. nauki inzh.; SUIKOV, B., inzh.

Rational systems in mining large copper-poor ore deposits
in the Elshitsa Mine, Panagyurski Mini State Mining
Enterprise. Min delo 18 no.8:19-16-63.

1. Niproruda (for Stoianov, Pashov, Atanasov).
2. Minno-geologhki institut (for Ianakiev).
3. Dnep "Panagiurski m.ni" (for S'ikov).

ATANASOV, B.

New possibilities for the mechanization of tobacco processing. Tekh delo no. 456: 2 22 D '62.

KARADEZOVA, M. [Karadzhova, M.]; NEDKOV, P.T.; ATANASOV, B.; KEIL, B.

On proteins. Pt.86. Coll Cz Chem 29 no.2:551-556 F '64.

1. Institute of Organic Chemistry, Bulgarian Academy of Sciences,
Sofia and Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences, Prague.

ATANASOV, Boris

How to determine expenses for the services in public eating places.
Trial record 6 no. 8; 57-64 '64.

L 26709-66

ACC NR: AP6017435

SOURCE CODE: UR/0216/66/031/001/0059/0062

(Bu)

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B

AUTHOR: Atanasov, B. P.

ORG: Institute of Organic Chemistry, BAN, Sofia (Institut organicheskoy khimii BAN)

TITLE: Physicochemical characteristics of metmyoglobin from Delphinus Delphis

SOURCE: Biokhimiya, v. 31, no. 1, 1966, 59-62

TOPIC TAGS: protein, IR spectrum, polypeptide, spectrophotometric analysis, viscosity

ABSTRACT: Three recrystallized metmyoglobin from Delphinus Delphis was investigated. A crystalline paste was dialyzed against 0.07 M phosphate buffer (pH 7.0); protein concentration was determined spectrophotometrically. Viscosity of the protein solution was determined with an Ostwald viscosimeter with a capillary length ~ 20 cm. The rate of meniscus movement was measured with a cathetometer. Solutions of different concentration from 1 to 12 mg/ml were studied. The results of relative viscosity determinations showed that this quantity depends only slightly on concentration and has an average value of $\eta_{rel} \approx 1.009$. The characteristic viscosity was calculated: $[\eta] = 1.77 \cdot 10^{-2}$ deciliter/gram. The experimental value of the specific volume of myoglobin is $V \approx 0.735$. Myoglobin agrees well with the Einstein equation: $[\eta] = 2.4 \cdot 10^{-2} \cdot V$, which indicates the sphericity of myoglobin molecules. Infrared spectra of crude and denatured myoglobin in the $500 - 800 \text{ cm}^{-1}$ region are in qualitative agreement with data from model polypeptides. The frequency of 620 cm^{-1} characteristic of alpha-spiral structure predominates.

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UDC: 547.963.4

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ACC NR: AF6017435

for the crude protein. In the disordered structure of the polypeptide chain the 670 cm^{-1} band is dominant, and in beta-structure -- the 710 cm^{-1} . The latter two bands are intensified in spectra of denatured protein, which is in agreement with the concept of denaturation as a conformational transition to a chaotic state of the polypeptide chain. The author expresses thanks to Professor S. E. Bresler and Professor M. V. Vol'kenshteyn for giving him the opportunity to work in their laboratories and for discussing the results of the work. Orig. art. has: 5 figures. [JPRS]

SUB CODE: 07, 20

SUBM DATE: 27Feb65 / ORIG REF: 001 / OTH REF: 005

Card 2/2 ✓

ATANASOV, D.(g.Sofiya)

Contests of Bulgarian radio operators. Radio no.12:19-20 D '54.
(Bulgaria--Radio operators) (MIRA 8:1)

ATAVASOV, D.

Our experience in fast installation of field cable lines. p. 87.

AMERISKI PREZLED. (Ministerstvo na naradnata obrana) Sofiia, Czechlovakia.
Vol. 5, no. 6, 1958.

Monthly List of East European Accessions (EEAI), IC, Vol. 9, No. 2, Feb. 1960
Uncl.

Atanasov, D.

High-voltage apparatus for testing protective instruments. p. 41

4
TEZHKA PROMISHLENOST, Sofiia, Bulgaria, Vol. 8, no. Apr. 1959

Monthly List of East European Accessions (EEAI) LC. Vol. 8, no. 10, Oct. 1959
Uncl.

ATANASOV, D.; IORDANOV, I.; ATANOSOV, A.

"Treatment of Tubercular Peritonitis with Materials from the Propaedeutic
Surgical Clinic." p. 2,
(ZDRAVEN FRONT, No. 46, Nov. 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4
No. 5, May 1955, Uncl.

ATANASOV, DIM.

KAPITANOV, G., professor; GRUEV, Iv.; DENEV, B.; ATANASOV, Dim.

Treatment of ileus with adhesions through intestinal plication.
Khirurgiia, Sofia 8 no.2:111-117 1955.

1. Vissh meditsinski institut V. Chervenkov--Sofiia propedevtichna
khirurgichna klinika Direktor: prof. G. Kapitanov.
(INTESTINAL OBSTRUCTIONS, surgery,
adhesive ileus)

ATANASOV, D.
SURNAME (In caps); Given Names

Country: Bulgaria

Academic Degrees: not indicated

Affiliation: not indicated

Khigiena, No 2, Mar/Apr 61, pp 9-10

Data: "Toward the Eradication of Malaria in Bulgaria."

ATANASOV D.

BULGARIA

Il. SHCHUNGALEV, V. BELOFITEV and D. ATANASOV *

"Our Experiences with Methylergometrine as Hemorrhage Preventative in the Placental Period in Obstetrics."

Sofia, Sovremenno Meditsina, Vol 13, No 12, 1962: pp 13-20.

Abstract[English summary modified]: Detailed clinical data on 1500 patients, whereof 500 received Swiss-made Methergine (Sandoz) and 500 Czech-made methylergometrine (Sofa); untreated controls averaged 286 ml. blood loss, Methergine 126 and Czech drug 108.7. Either of the two preparations also accelerated placental expulsion and reduced uterine atonia, temperature and other undesirable symptoms. Table, two diagrams, no references.

*Department of Obstetrics and Gynecology (Katedrata po akusherstvo i ginekologii) Head (rukoveditel) Prof Il. SHCHUNGALEV, Medical College (VM [Visshi meditsinski institut]) Sofia.

1/1

BEDNARIK, B.; PERESTY, S.; ATANASOV, D.

Contribution to exsanguination of experimental animals. Scr. med.
fac. med. Brno, 35 no.3:87-91 '62.

l. II. chirurgicka klinika lekarske fakulty university J.E.Purkyne
v Brne Prednosta: prof. MUDr. Jan Navratil.
(PHYSIOLOGY experimental) (BLOOD LETTING experimental)
(BLDOD CIRCULATION)

BEDNARIK, B.; ATANASOV, D.; PERESTY, S.; JOBANEK, B.

A simple method of anesthesia with the aid of a respirator in
experimental animals. Scr. med. fac. med. Brunen. 35 no.3:93-
98 '62.

1. II. chirurgicka klinika lekarske fakulty university J.E.Purkyne
v Brne Prednosta: prof. MUDr. Jan Navratil.
(RESPIRATORS) (ANESTHESIA exper)
(SURGERY OPERATIVE exper)

BEDNARIK, B.; ATANASOV, D.; PERESTY, S.; JOBANEK, B.

A simple method of anesthesia with the aid of a respirator in experimental animals. Scr. med. fac. med. Brunen. 35 no.3:93-98 '62.

1. II. chirurgicka klinika lekarske fakulty university J.E.Purkyne v Brne Prednosta: prof. MUDr. Jan Navratil.
(RESPIRATORS) (ANESTHESIA exper)
(SURGERY OPERATIVE exper)

BENDAR, O.; ATANASOV, D.; CIKL, M.; PODLAHA, J.

Transplantation of the heart. Rozhl. chir. 41 no.5:313-318 '62.

1. II chirurgicka klinika lekarske fakulty University J. E.Purkyne
v Brne, prednosta prof. MUDr. Jan Navratil.
(HEART transpl)

NAVRATIL, J.; ATANASOV, D.; BEDNARIK, B.; HRDLICA, M.; MUSIL, J.; OLEJNIK, O.;
VASULIN, M.; ENENKL, V.; HLOUSEK, J.; KRATOCHVIL, Z.

Experiences with surgery of heart defects in deep hypothermia
(preliminary report). Cas. lek. cesk. 101 no.50:1475-1481 14 D '62.

l. II. chirurgicka klinika university JEvP v Brne, prednosta prof. dr.
J. Navratil. Katedra termomechaniky VUT v Brne, prednosta dr. inz.
V. Enenkl.

(HEART DEFECTS CONGENITAL) (HYPOTHERMIA INDUCED)
(HEART SURGERY)

ATANASOV, D.

Causes of embolism in the surgical treatment of mitral stenosis
and methods of their prevention. Khirurgiia (Sofiia) 16 no.12:
1099-1106 '63.

1. II Khirurgicheskaya klinika v gr. Burno, Chekhoslovakia.
Direktor: prof. IAn Navratil.

*

SHTURKALEV, Il.: ILIEV, G.; ELOPITOV, B.; ATANASOV, D.

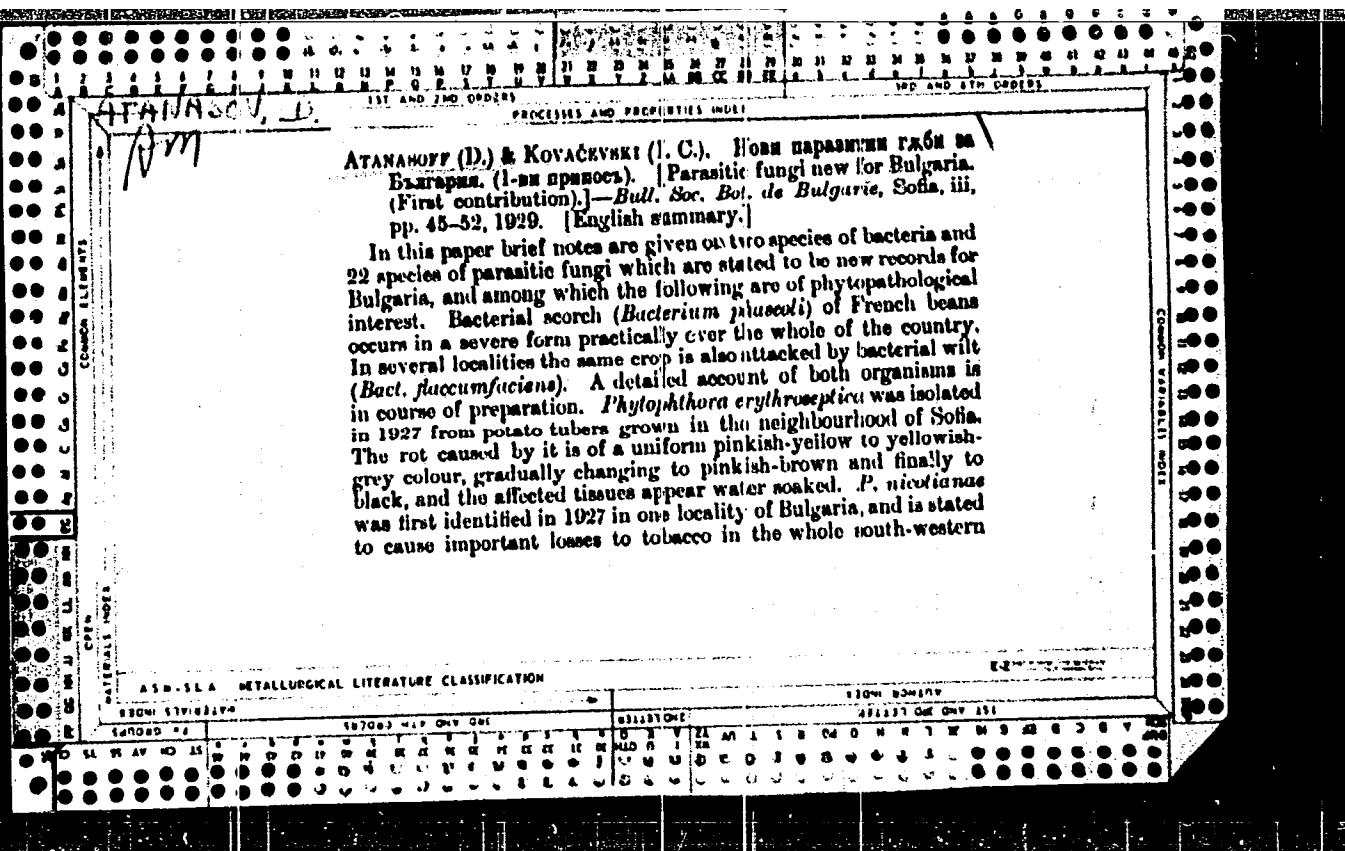
Our experience in the prevention by medication of hemorrhages during the placental period in a series of 700 deliveries. Akush. ginek. (Sofiia) 4 no.3:169-175 '65.

1. Vissz meditsinski institut, Sofia, Katedra po akusherstvo i ginekologiiia (rukov.: prof. Il. Shturkalev).

ATANASOV, D.

Transaminase and aldolase activity after heart operations
performed under deep perfusion hypothermia. Cas. lek. Cesk.
104 no.46:1269-1275 19 N '65.

1. II. chirurgicka klinika lekarske fakulty University J.E.
Purkyne v Brne (prednosta prof. dr. J. Navratil, DrSc.).

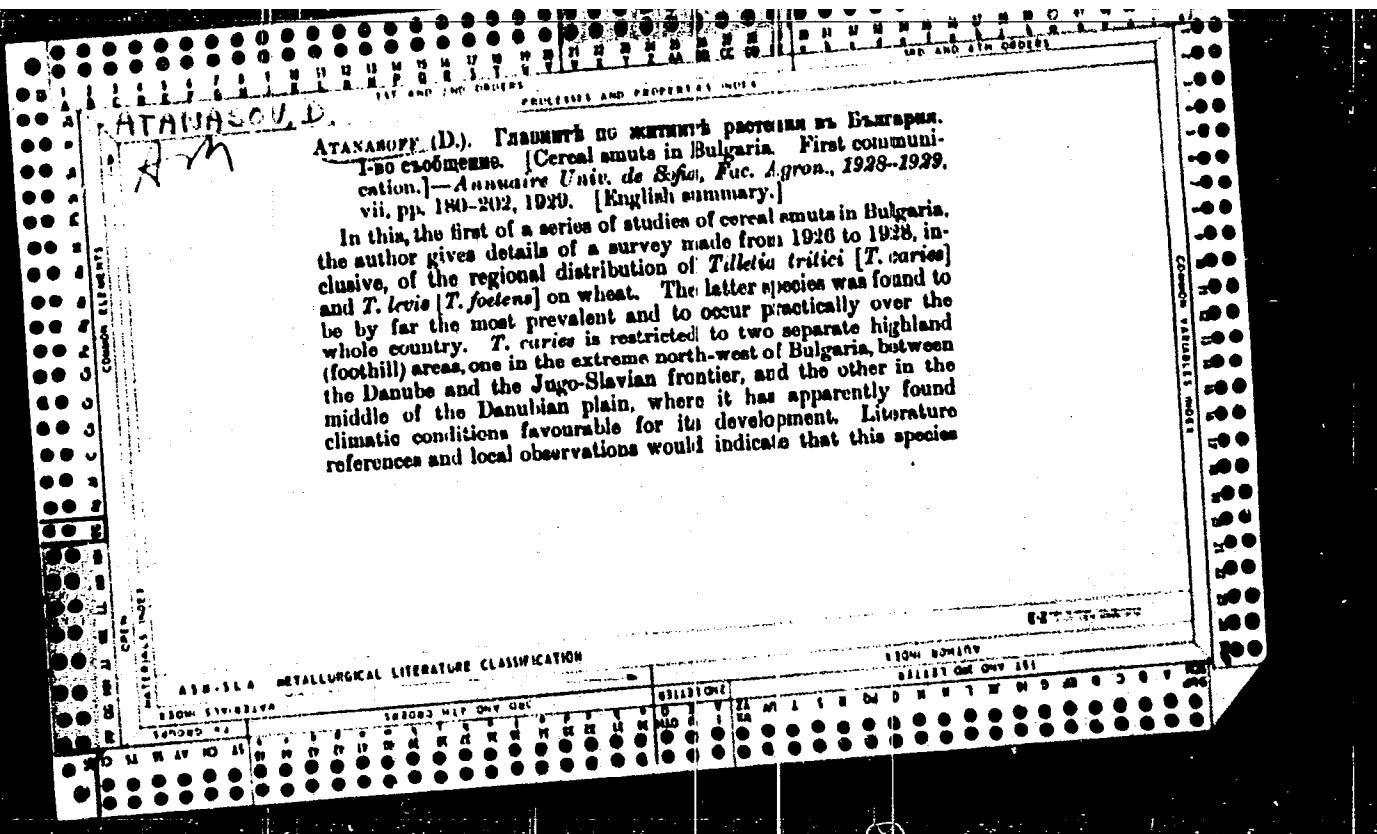


tobacco-growing region, as it damps off seedlings and attacks the plant at all stages of development, forming black spots on the stems and leaves. Besides tobacco, *P. nicotianae* was also found parasitizing the castor bean (*Ricinus communis*), eggplant, tomato, and *Cornellina nudiflora*. *Scleroporus macrospora* was found in two localities attacking rye, this being stated to be the first record of the fungus on this host. Primary infection appears to occur in the spring just before the tillering stage, and all the organs may be invaded. The chief symptoms, however, appear on the leaves, in the form of light to dark brown spots which begin to develop at the apex or at the periphery of the leaves, gradually extending downwards and inwards. Infected plants remain stunted and either fail to produce ears or those that develop are badly deformed. All the invaded tissues contain numerous oospores of the fungus, which measure from 40 to 60 μ in diameter. In 1928 some fields of chick pea (*Cicer arietinum*) were attacked by *Uromyces ciceris-arietini*, which formed rusty-red uredomori on both sides of the leaves, and by *Phyllosticta rubiae* [R.A.M., vii, p. 857]; the latter forms on the pods, and occasionally on the leaves and stems numerous round, ochre-yellow to greyish-brown spots, 4 to 5 mm. in diameter, with a dark brown margin, bearing black pycnidia up to 74 μ in diameter; the pycnospores are continuous, hyaline, cylindrical with tapering ends or ovoid, and measure 10 to 12 by 4 to 5 μ . *Coniothyrium vernedorffiae* [ibid., vii, p. 446] was recorded in 1929 on Crimson Rambler roses, on the branches of which it formed large, frequently coalescing spots, from 5 to 6 cm. or more in diameter. *C. concentricum* was found on the leaves of *Yucca filamentosa*, forming elliptical, amphigynous spots, from 2 to 3 cm. in diameter, yellowish-grey in the centre and dark brown at the periphery. The pycnidia are lenticular, 160 to 200 μ in diameter, and contain yellowish-brown, oval to ovoid spores, which measure 4 to 5 by 4 μ . *Verticillium dahliae* was isolated from potato tubers grown in the neighbourhood of Sotia. *Piricularia oryzae* was isolated in 1927 and 1928 on rice, causing a foot rot and leaf

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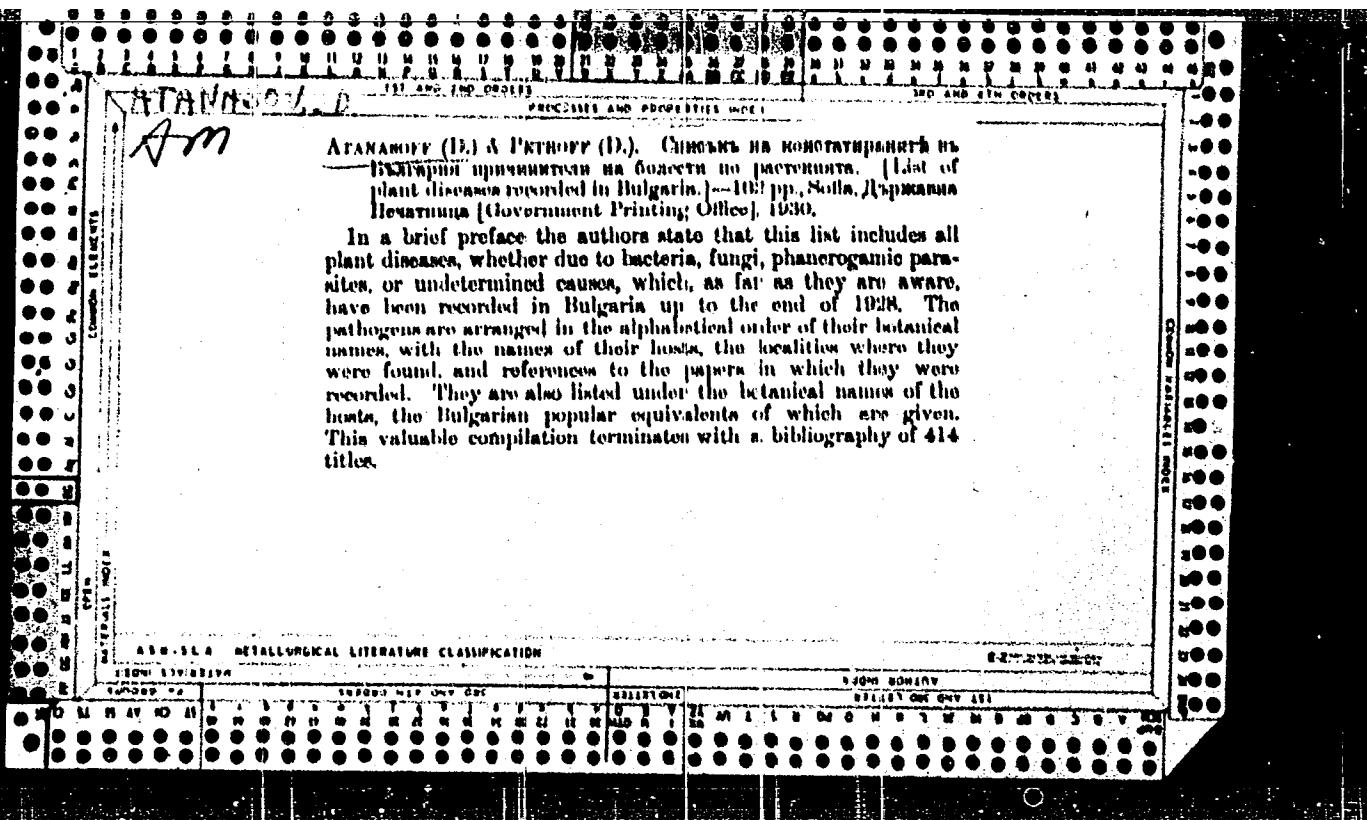
spots; the diseased plants were stunted and failed to set grain.
Helminthosporium sativum was isolated from wheat grains.

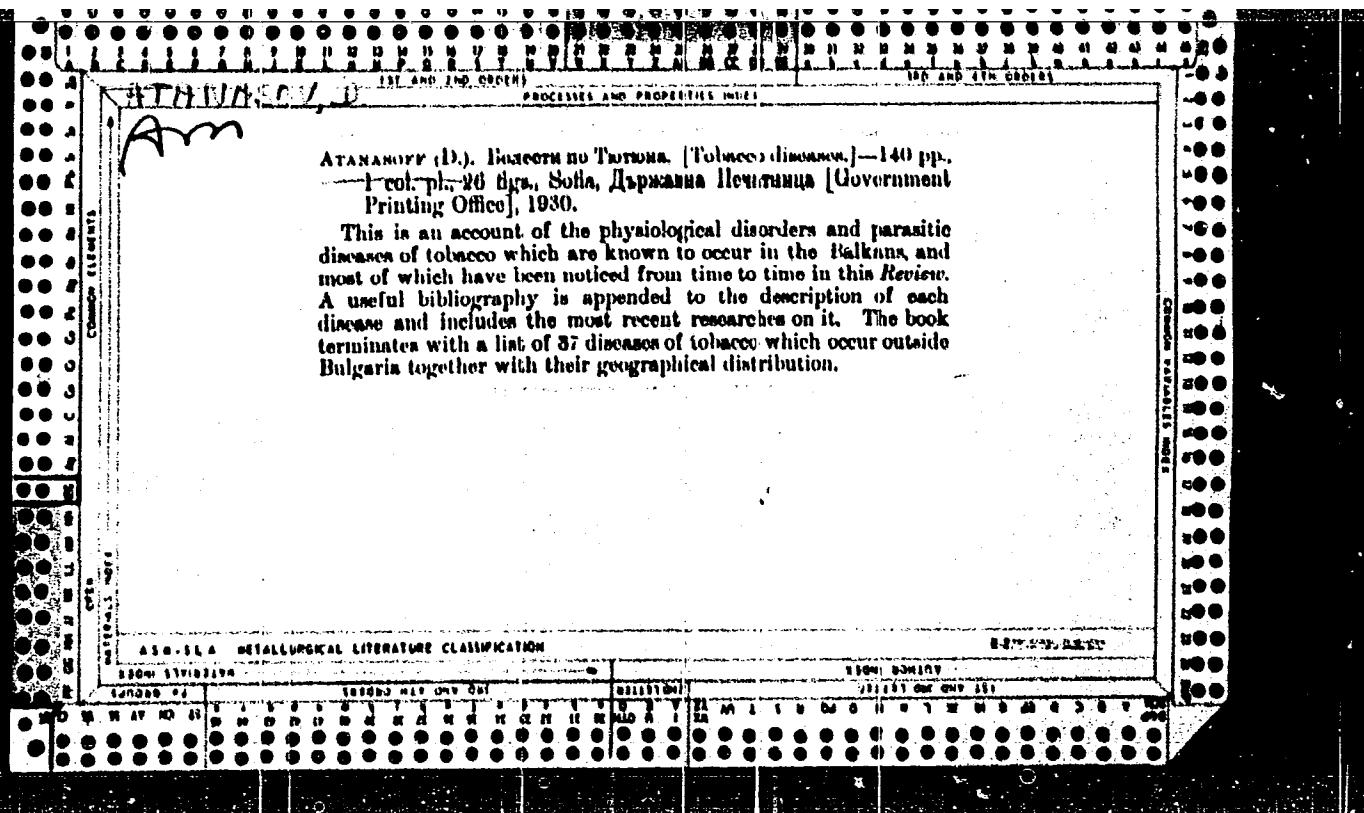
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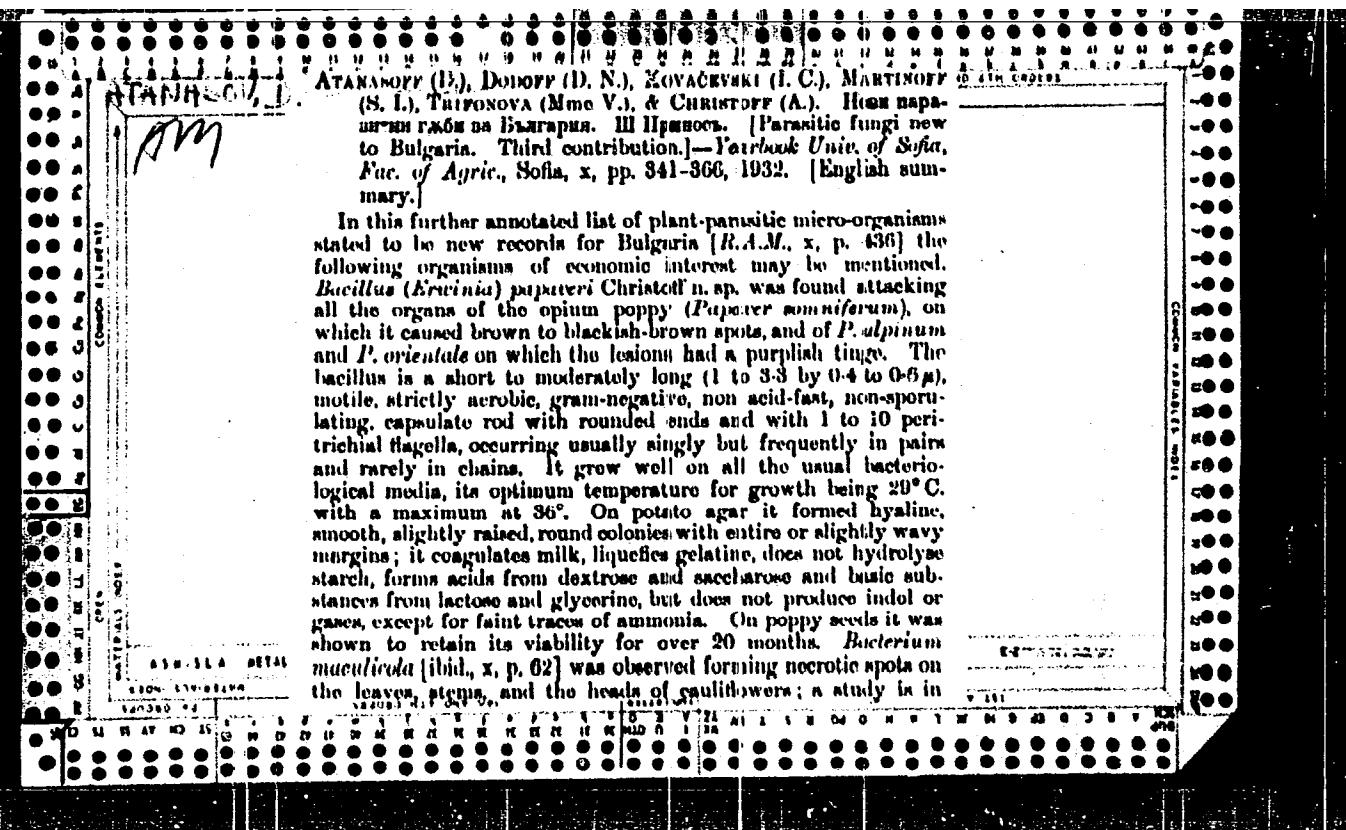


was introduced into Bulgaria some twenty-five years ago with imported wheat, while *T. foetida* is of much older standing. There is evidence, however, that *T. curva* is slowly but steadily gaining ground, since traces of it have been found near Philippopolis in south Bulgaria, a fact which calls for active control measures, as the disease may prove very destructive in new areas.

Infection experiments on five pure lines of Bulgarian wheats and the two American varieties Hussar and Martin showed the existence in Bulgaria of at least four biological forms of *T. foetida* which differ in their reaction on differential hosts and in their geographical distribution. The most virulent form was that collected from Rouschoak in the north, and the least virulent that from Tchirpan in the south. Of the wheats tested Martin was the most resistant to all four forms (9.67 per cent. average infection), while the most susceptible was the Bulgarian pure line 84 (68.15 per cent. infection).

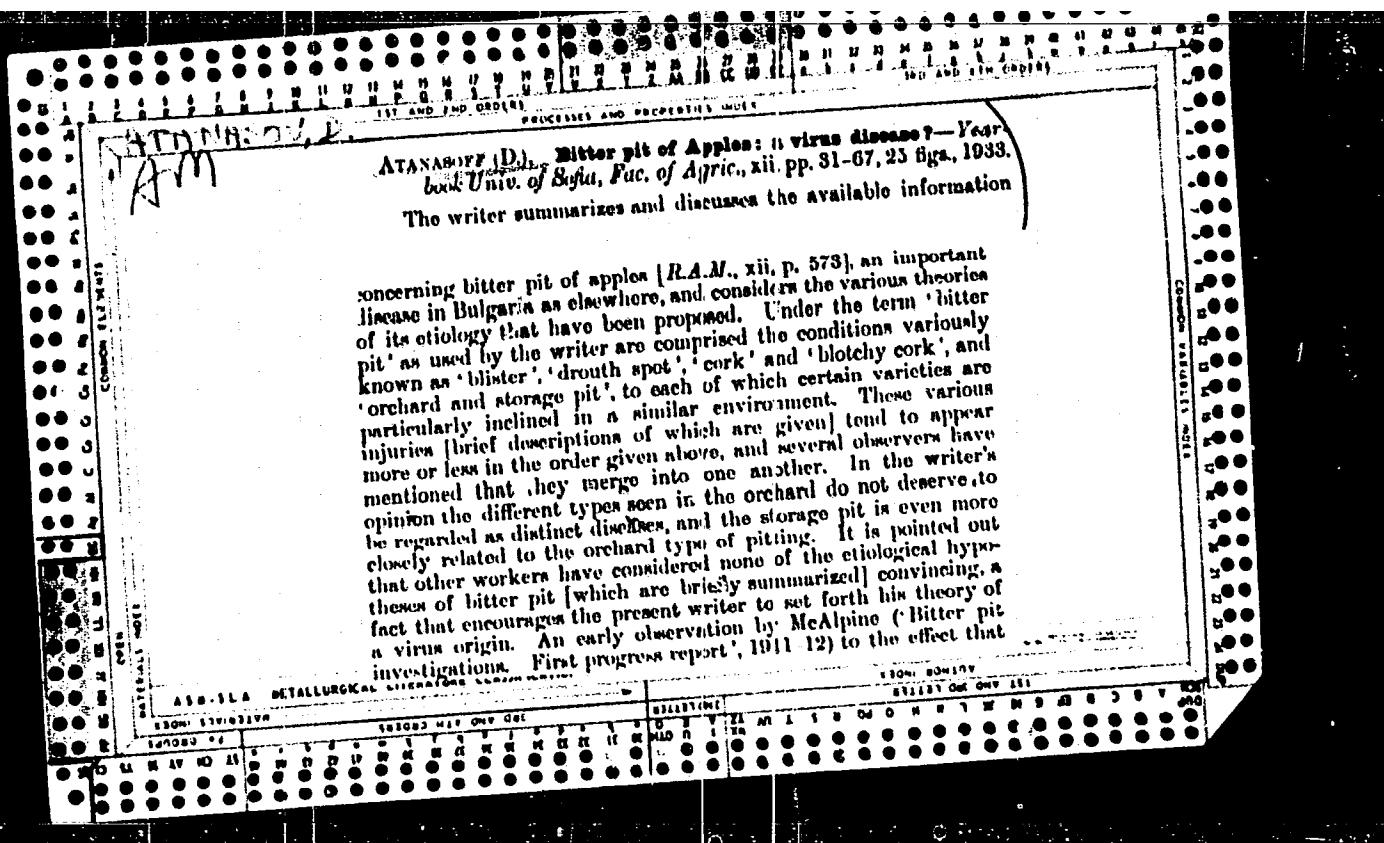




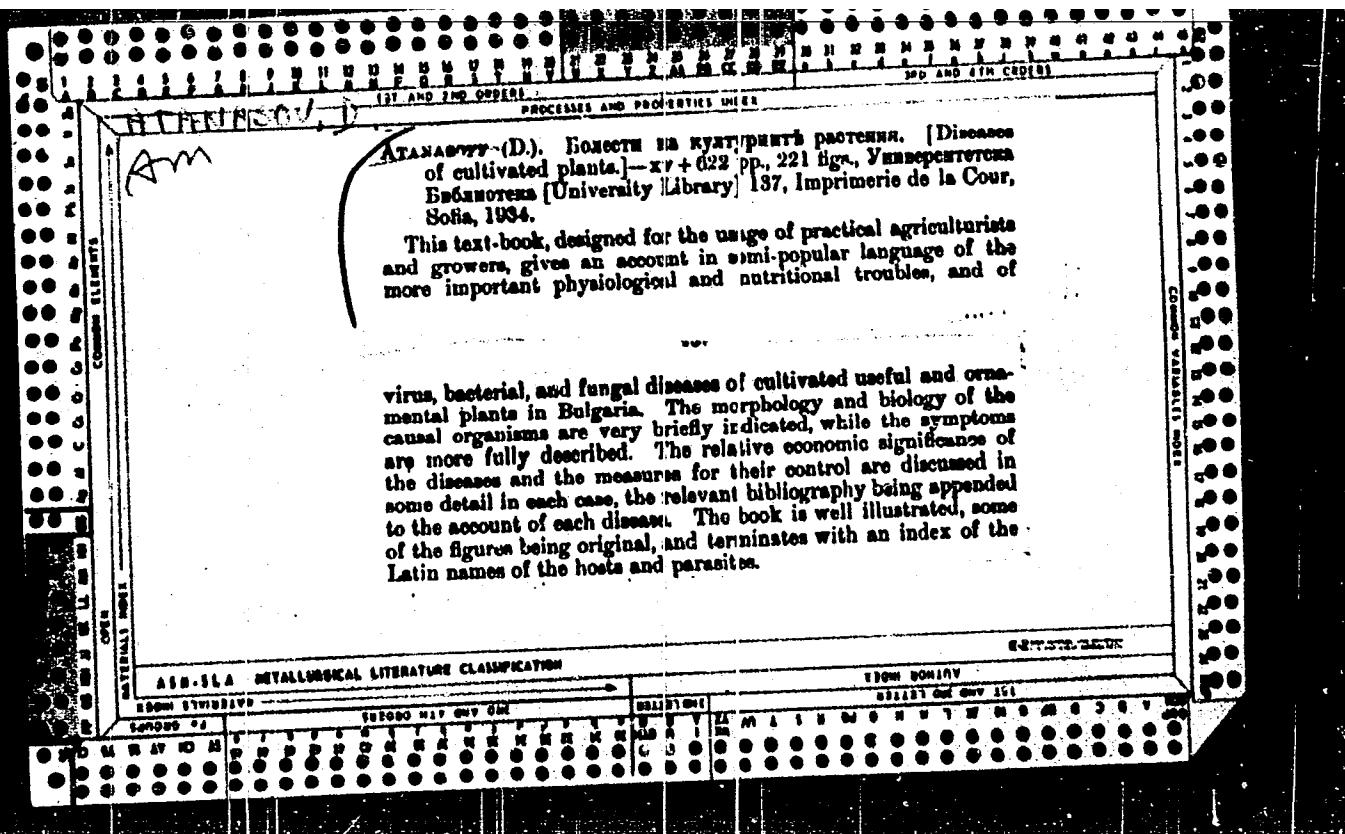


progress to determine the real identity of the causal organism. The other records include *Bact. medicaginis* var. *phaseolicola* [ibid., xi, p. 618] on French beans (*Phaseolus vulgaris*) grown from seed imported from Germany; *Urocystis cepulae* on onion [ibid., x, p. 499]; *U. tritici* on wheat [ibid., x, p. 782]; *Puccinia pruni-spinosae* [ibid., xi, p. 859] in the aecidial stage on *dennisonii* *runcinuloides* and in the uredo- and teliospore stages on different species of *Prunus*, including plum; *Microstroma album* [ibid., vii, p. 407; x, p. 404] on oak (*Quercus pedunculata*); *Phyllosticta antirrhini* on *Antirrhinum majus* [ibid., vii, p. 723]; *P. canabis* on hemp (*Cannabis sativa*); *Macrophoma straminella* on rhubarb; *Cytospora capitata* [ibid., v, p. 747] on dead apple buds and twigs; *O. leucostoma* var. *cincta* [ibid., iii, p. 433; v, p. 342] causing the death of peach twigs; *Septoria cucurbitacearum* [ibid., x, p. 296] on vegetable marrow; *N. pusarini* [ibid., viii, p. 422] on barley and some wild species of *Hordeum*; *N. tritici* [ibid., x, p. 84], very widespread on wheat, rye, and *Poa pratensis*; *Verticillium albo-atrum* on *Acer negundo*, eggplant, *Capsicum annuum*, tomato, plum, peach, apple, and cotton; *Ramularia cynarea* [ibid., vii, p. 656] on globe artichokes (*Cynara esculenta*); *Fusarium culmorum* [ibid., xi, p. 632] on wheat, tobacco, rice, and French beans; and *F. aethiopae* [ibid., iii, p. 202 and above,

p. 709] on rice. The paper terminates with a list of new host plants of parasitic fungi that were recently found in Bulgaria.



the disease is most severe in trees grafted on Northern Spy already points in this direction, and may indicate the widespread infection of this commonly used stock, especially as it has been reported both in Australia and South Africa that seedlings may remain free from bitter pit for many years. Mix's experimental data, reported in *New York (Genesee) Agric. Exper. Stat. Bull.* 426, 1916, also lend support to the virus theory. In agreement with Mix and Cunningham, the writer found at the Philippopolis State Nursery that on one tree (White Astrachan) only certain branches were affected while other trees showed a complete gradual decline. A description is given of various symptoms of a number of virus diseases of other plants which the writer considers to show close analogies to bitter pit of apple. These include plum pox [*R.A.M.*, xii, p. 229], potato streak and net necrosis, tomato streak, 'buck-skin' of cherry [*ibid.*, x, p. 628], 'black measles' of the vine (with which are synonymous the California vine disease, little leaf, roncet, court noud, arricciamento [*ibid.*, xii, p. 418], mal nero, mosaïc, &c.), ring spot [*ibid.*, xii, p. 435] of apples, and infectious variegation [*ibid.*, xii, p. 632]. In fact, just as the term 'curl' formerly covered all virus diseases of the potato, so is 'bitter pit' now used to designate a whole group of allied conditions which can only be separated on the basis of careful study.



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